

THOMSON
Television
Basic Service Data

TX_TVD809

F20TF10, F19425
F19426, F19431, F19436
BD20TF10, 13V110TD



Technical Publications
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SAFETY NOTICE

USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a (⚠) on schematics and on the parts list in this Service Data and its bulletins. Before servicing this instrument, it is important that the service technician read and follow the “Safety Precautions” in the Basic Service Data.

TX_TVD809

SAFETY PRECAUTIONS

DO NOT OPERATE THIS INSTRUMENT OR PERMIT IT TO BE OPERATED WITHOUT ALL PROTECTIVE DEVICES INSTALLED AND FUNCTIONING. SERVICERS WHO DEFEAT SAFETY FEATURES OR FAIL TO PERFORM SAFETY CHECKS MAY BE LIABLE FOR ANY RESULTING DAMAGE, AND MAY EXPOSE THEMSELVES AND OTHERS TO POSSIBLE INJURY.

READ AND COMPLY WITH ALL CAUTION AND SAFETY-RELATED NOTES ON OR INSIDE THE RECEIVER CABINET, AND THE RECEIVER CHASSIS, OR ON THE PICTURE TUBE.

SAFETY GLASSES SHOULD BE USED WHEN SERVICING ELECTRONIC INSTRUMENTS. INADVERTENTLY OVERSTRESSING COMPONENTS MAY CAUSE THEM TO SHATTER, DISCHARGING SMALL PARTICLES.

DESIGN ALTERATION WARNING - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions may alter the safety characteristics of this receiver and create a hazard to the user. Design alterations or additions may void the manufacturer’s warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

BEFORE RETURNING AN INSTRUMENT TO THE CUSTOMER, always make a safety check of the entire instrument, including, but not limited to, the following items:

FIRE AND SHOCK HAZARD

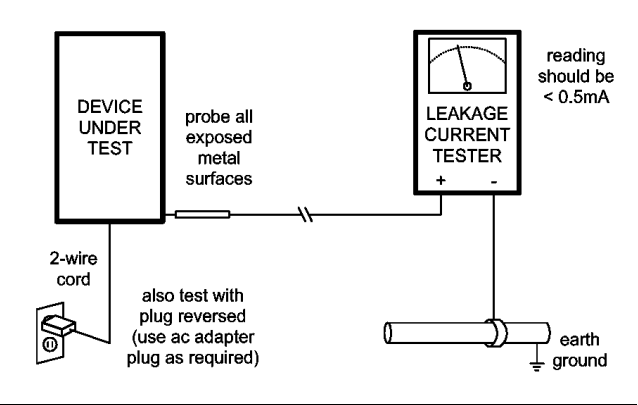
- Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs and other protective hardware have been installed in accordance with the original design.
- Be sure that there are no cabinet openings through which an adult or a child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to: (a) spacing between picture tube and cabinet mask, (b) excessively wide cabinet ventilation slots, and (c) an improperly fitted or incorrectly secured back cover.
- Observe original lead dress. Take care to restore leads to their original dress. Make sure that leads are not in contact with sharp edges or thermally hot parts. Always inspect in all areas for pinched, out-of-place or frayed wiring. Do not change spacing between adjacent components, or between components and printed circuit board. Check the AC power cord for damage.
- Be certain to remove loose solder balls and all other loose foreign particles.
- Check components, parts and/or wiring for physical evidence of damage, overheating or deterioration, and replace if necessary. Determine the cause of damage and/or overheating and, if necessary, take corrective action to remove any potential safety hazard.
- Parts Replacement - Many TV electrical and mechanical parts have special safety-related characteristics, some of which are often not evident from visual inspection, and the protection they give cannot necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by a (⚠) on schematics and in the parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in the service data parts list may create shock, fire and/or other hazards. Always consult the appropriate current service literature for the latest information.
- Some TV receiver chassis’ normally have 85VAC (RMS) between chassis and earth ground, regardless of the AC plug polarity. Some TV receiver chassis’ are electrically connected directly to one conductor of the AC power cord. Some TV receiver chassis’ have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered. Thus, when servicing any unit always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose the servicer to possible shock hazard, and may cause damage to servicing instruments.
- Many electronic products use a polarized AC line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords that do not incorporate the polarizing feature should never be used.

PICTURE TUBE IMPLOSION WARNING - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number.

Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some “in-line” picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such “permanently attached” yokes from the picture tube.

X-RADIATION AND HIGH VOLTAGE LIMITS - Because the picture tube is the primary source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, a replacement picture tube must be the same type as the original. The picture shields, mounting hardware and lenses (projection TV) may also perform an X-radiation protection function, and they must be correctly in place. Anode connectors contain an X-radiation shield - use only the manufacturer’s specified anode connectors. High voltage must be measured each time servicing that involves power supply, horizontal deflection or high voltage circuits is performed. Correct operation of the X-radiation circuits must also be confirmed each time these circuits are serviced (X-radiation circuits may also be called “horizontal disable” or “hold-down” circuits). Read and apply high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications. These limits and specifications are given on instrument labels and are included in this service data. High voltage is maintained within specified limits by close-tolerance safety-related components (and adjustments) in the high voltage circuit. If high voltage exceeds specified limits, check each safety related component specified on the schematic and take corrective action.

ANTENNA LEAKAGE RESISTANCE CHECK - With the instrument AC plug removed from the AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch (if applicable) in the “on” position. Connect one lead of an ohmmeter to the AC plug prongs and touch the other ohmmeter lead, in turn, to each (exposed) antenna input terminal screw and/or coaxial connector. If the measured resistance is less than 1.0 Megohm, or greater than 5.2 Megohm, an abnormality exists which must be corrected before the instrument is returned to the customer. Repeat this test with the AC switch in the “off” position.



LEAKAGE CURRENT HOT CHECK FOR 2-WIRE OR 3-WIRE GROUNDED CORD SETS - With the instrument completely reassembled, plug the AC line cord into the mains AC outlet at normal line voltage via a non-polarized adapter. DO NOT GROUND THE 3RD PRONG OF THE ADAPTER AND DO NOT USE AN ISOLATION TRANSFORMER. Use a leakage current tester or metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and with Underwriters Laboratories (UL) 1492 (Section 67). With the instrument AC switch first in the “on” position and then in the “off” position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.). Any current measured must not exceed 0.5 milliampere. Reverse the adapter plug in the outlet and repeat the test. ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES. If a leakage current tester is not available, connect a 1.5 Kohm, 10 Watt resistor, in parallel with a 0.15 µF, 150V capacitor, between earth ground and each exposed metal part of the instrument (as shown above). Use an AC voltmeter with at least 5000 ohm/volt sensitivity to measure the potential across the resistor. The potential measured for any exposed metal surface must not exceed 0.75 volts.